

## **ABSTRACT**

An apparatus and a method for converting image signals from an interlaced scanning format to a progressive scanning format are disclosed. Additionally, an apparatus and a method for changing a vertical scanning rate of progressively scanned image signals are also disclosed. Field motion estimator estimates field motions between a current field and reference fields to find an optimal reference field. Then a field motion compensator restores a missing line of the current field using information given from the optimal reference if the optimal reference field unevenly matches to the current field. Otherwise, a linear interpolator restores the missing line of the current field by linearly interpolating lines located adjacent to the missing line in the current field. Furthermore, a frame motion estimator estimates frame motions between adjacent frames using the progressively scanned image signals and field motions estimated in the field motions estimator. Finally, a frame motion compensator provides a new composite image between the adjacent frames using the frame motions estimated.